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PRE-APPEAL BRIEF REQUEST FOR REVIEW

Docket Number (Optional)
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on _____June 23, 2008_____

Signature ___/Karen Vertz/___

Typed or printed name ___Karen Vertz___

Application Number	Filed
10/044,185	January 9, 2002

First Named Inventor
David B. Kramer

Art Unit	Examiner
2616	Jason E. Mattis

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheet(s).
Note: No more than five (5) pages may be provided.

I am the

☐ applicant/inventor.

☐ assignee of record of the entire interest.
See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed.
(Form PTO/SB/96)

☑ attorney or agent of record. ___33,182___
Registration number

☐ attorney or agent acting under 37 CFR 1.34.

Registration number if acting under 37 CFR 1.34 _____

_____
Signature

David H. Hitt
Typed or printed name

972-480-8800
Telephone number

June 23, 2008
Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required.
Submit multiple forms if more than one signature is required, see below*.

☑ *Total of ___1___ forms are submitted.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: David B. Kramer, *et al.*

Serial No.:   10/044,185

Filed: January 9, 2002

Title: NON-BLOCKING CROSSBAR AND METHOD OF OPERATION
                    THEREOF

Grp./A.U.:   2616

Examiner: Jason E. Mattis   Confirmation No.: 9779

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

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> June 23, 2008   (Date)
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> Karen Vertz
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> /Karen Vertz/
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Sir:

PRE-APPEAL BRIEF REQUEST FOR REVIEW

The Applicants have carefully considered this Application in connection with the Examiner's Final Rejection mailed May 7, 2008, and the Advisory Action of June 9, 2008, and respectfully request a Pre-Appeal Brief Review of this Application in view of the following remarks.

REMARKS/ARGUMENTS

The Applicants originally submitted Claims 1-20 in the Application. Accordingly, Claims 1-20 are currently pending in the Application.

I.   **Rejection of Claims 1-20 under 35 U.S.C. §103**

The Examiner has rejected Claims 1-3, 6-10, 13 and 14 under 35 U.S.C. §103(a) as being anticipated by U.S. Publication No. 2002/0110086 to Reches ("Reches") in view of U.S. Patent Publication 2002/0087778 to Dell *et al.* ("Dell".) The Examiner has rejected the remaining dependent claims under 35 U.S.C. §103(a) as being variously anticipated by Reches in view of Dell and in further view of U.S. Patent No. 6,975,638 to Chen *et al.* ("Chen") and U.S. Patent No. 5,905,873 to Hartmann *et al.* ("Hartmann"). The Applicants respectfully disagree in light of the following remarks, and request the claims be allowed to issue.

The Examiner has previously recognized that Reche does not disclose "causing packets to be transmitted only when a destination FIFO and in interposing one of the crossbar FIFOs have sufficient memory at the same time to receive and then contain an entirety of [*sic.* "a packet of"] the packets." (*See* Examiner's Final Action, page 3)

The Examiner cited to Dell to cure this deficiency. The Examiner contended:

> See pages 8-9 paragraphs 111-120, pages 9-10 paragraphs 128-137, and Figures 12 and 15-16 of Dell et al. for reference to input devices receiving grants to transmit cells only when there is no back-pressure in corresponding FIFO queues that make up a path from an input to the destination meaning that a cell is transmitted toward the output only when all queues have enough memory to contain the cell at the same time. (*See* Examiner's Final Action, pages 3-4.)

Dell is generally directed a switching stage that employs crossbar devices. (*See* page 2, paragraph [0013]). In Dell, the "switch fabric of the present invention is a cell-switching engine handling *fixed-sized* switching cells." (*See* page 6, paragraph [0090]). Dell uses one or more crossbars to achieve scalability in self-routing of cells. (*See* page 2, paragraph [0012]). In Dell, "[a] switching cell has a header and a payload. The payload size is programmable... The term 'programmable' implies that ... the particular payload size is selected when the fabric switch is initially configured. Once the switch fabric is configured, the payload size remains fixed for all subsequent switch fabric operations." (*See* page 6, paragraph [0090]; emphasis added).

In paragraph [0091], Dell states:

> Protocol independence is achieved by *encapsulating user data packets into the payload of switching cells.* This encapsulation function is provided by network processors on the line cards. When user data packets are larger than the switching cell size, the encapsulation function involves dividing each user data packet into two or more different switching cells.

(Emphasis added.)

In other words, Dell *encapsulates* data packets into the payload of switching *cells*. The Applicants respectfully state that the cited portions of Dell do not disclose or suggest wherein the cells "plurality of packets that are unencapsulated, unsegmented and of differing lengths," as are also claimed in Claim 1.

According to M.P.E.P. §2146.2: "References Cannot Be Combined Where Reference Teaches Away From Their Combination." There is an explicit "teaching away" from a use of segmentation of packets, such as found in the secondary reference of Dell, within the primary reference of Reche.

Reche states:

[0004-0005] Both Aybay and McKeown illustrate crossbar switches that use a synchronous scheduling scheme and handle fixed length cells. Variable length packets are fragmented to a plurality of fixed length cells before being sent across the crossbar switch to be reassembled to generate variable length packets. At each time slot a plurality of fixed size cells are sent across the crossbar switch... *A main disadvantage of these crossbar switches is that the segmentation and the reassembly are both time and resource consuming. Furthermore, the addition of control signals for allowing the segmentation and reassembly of the variable length packet reduce the throughput of the crossbar switch.* (Emphasis added)

Indeed, the "Field of the Invention" of Reches states:

[0001] The present invention relates to a multiport switch and a method for forwarding variable length packets across a multiport switch and especially for a method for forwarding variable length packets *without segmenting the variable length packets to fixed sized cells* within a network element having a multiport switch. (Emphasis added.)

Furthermore, the "Summary of the Invention" of Reches states:

[0008] The invention provides a method for forwarding variable length packets across a multiport switch. *The method does not require to segment or to fragment a received variable length packet thus reducing overhead and allowing an enhanced throughput of the crossbar.* The method is based upon a periodic scheduling scheme that simplifies the scheduling.

The above constitutes an explicit teaching away from the fixed-cell segmentation approach of Dell. Dell is therefore an inapposite reference, and is not properly combinable with Reche, and the Examiner has not made a proper *prima facie* case of obviousness.

However, the Examiner erroneously contends that the above arguments regarding Reche "teaching away" from packet segmentation, such as used in Dell, are moot. The Examiner states in the Advisory Action of June 6, 2008:

Applicant also argues that because Dell et al discloses using fixed-size switching cells, Dell

et al teaches away from the method disclosed by Reches; however this argument is also moot since the combination used in the rejections under 35 U.S.C. 103 does not involve combining the cells used by Dell et al with the system and method of Reches. The combination used in the prior art rejection is based on a combination of the Dell et al. teaching of only allowing input devices to transmit data through a switch to an output when there is no back-pressure in any switch stage between the input and the output ... with the system and method of Reches. Thus it is not the cell structure of Dell et al. that is combined with the system and method of Reches, but rather the forwarding grant determining method of Dell et al. that is combined with the system and method of Reches. (*See* Advisory Action, pages 2-3.)

The Applicants respectfully state that the Examiner has not applied a correct legal standard as to what constitutes a "teaching away." Therefore, the Examiner's conclusion regarding the above arguments regarding the "teaching away" made by the Applicants as "moot" is in error. According to the M.P.E.P. §2143.03 VI: "A prior art reference must be considered in its entirety, i.e., as a <u>whole</u>, including portions that would lead away from the claimed invention. *W.L. Gore & Associates, Inc. v Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984)." (Emphasis in *M.P.E.P.*) When "mooting" the above-noted arguments concerning the explicit "teaching away" regarding packet segmentation of Reches by only combining Reches with a "specific teaching" of Dell, rather than considering Dell "as a <u>whole</u>" as required by case-law and M.P.E.P. §2143.03 VI, the Examiner erroneously ignores the "as a whole" requirement. Therefore, the Examiner has not presented a proper *prima facie* case of obviousness.

Indeed, the above "teaching away" of Reche from packet segmentation is not surprising. According to the M.P.E.P. §2143.02 VI: "The Proposed Modification Cannot Change the Principle or Operation of a Reference," which the Examiner would improperly do if allowed to combine the two references. If, *arguendo*, the back-pressure grant determination of Dell as characterized by the Examiner were to be used in the variable packet environment of Reche as improperly proposed by the Examiner, Dell would not check FIFOs, whether they be destination FIFOs or crossbar FIFOs, to determine whether they have sufficient memory to contain an *entire* packet, as Claim 1 recites.

To the contrary, in Dell, if any space in memory of the back-pressure grant determination is available, it is deemed sufficient. The actual amount of memory available to contain a cell is not checked. Dell has no need to check the amount of memory, as programmed cell length does not vary. Moreover, Reches would have to employ a back pressure grant determination system designed for fixed-length cells, which would not determine whether a destination FIFO and a crossbar FIFO have sufficient memory to contain an *entire* packet, as Claim 1 recites.

Furthermore, Reche states: "Another prior art solution for scheduling variable sized packets is to constantly track the outputs and the inputs in order to determine when variable length packets

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finished to traverse the crossbar switch. This method complicated the scheduling scheme and is not fitted to ultra high frequency switching." (*See* paragraph [0006]). In light of this teaching away, one of ordinary skill in the art would not be motivated to combine Reches, which disparages continuously tracking outputs and inputs, with Dell, which the Examiner cites for a disclosure of a "forwarding grant determining method", to arrive at the invention of independent Claim 1, which recites: "a scheduler configured to cause a plurality of packets that are unencapsulated, unsegmented and of differing lengths to be transmitted ... only when both said destination FIFO associated therewith and an interposing one of said crossbar FIFOs have sufficient memory at a same time to receive, and then contain an entirety of a packet of said plurality of packets." Instead, Reches employs a periodic scheduling, which helps avoid a need for constantly tracking inputs and outputs.

In light of the foregoing arguments, the Examiner has therefore not presented a proper *prima facie* case of obviousness. The Applicants therefore respectfully state that the Examiner has not therefore presented a *prima facie* case of obviousness for independent Claim 1, nor for similar reasons, independent Claims 8 and 15, nor their respective dependent claims. Nor has the Examiner cited Chen and Hartmann to cure this deficiency.

II.   Conclusion

In view of the foregoing remarks, the Applicant sees all of the Claims currently pending in this Application to be in condition for allowance and therefore earnestly solicits a Notice of Allowance for Claims 1-20.

The Applicant requests the Reviewers to telephone the undersigned attorney of record at (972) 480-8800 if such would further or expedite the prosecution of the present Application. The Commissioner is hereby authorized to charge any fees, credits or overpayments to Deposit Account 08-2395.

Respectfully submitted,

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